

Sequence Listing



*new seq list omada a*  
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<110> Innogenetics N.V.

<120> Purified hepatitis C virus envelope proteins for diagnostic and therapeutic use.

<130> 2551-68

<140> 09/995,791

<160> 122

<170> PatentIn 3.1

<210> 1

<211> 21

<212> DNA

<213> Hepatitis C virus

<400> 1

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21

<210> 2

<211> 68

<212> DNA

<213> Hepatitis C virus

<400> 2

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60

taactgca

68

<210> 3

<211> 642

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..639

<220>

<221> mat\_peptide

<222> 1..636

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48

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1	5	10	15
ctg acc att cca gct tcc gct tat gag gtg cgc aac gtg tcc ggg atg			96
Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Met			
20	25	30	
tac cat gtc acg aac gac tgc tcc aac tca agc att gtg tat gag gca			144
Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala			
35	40	45	
gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag			192
Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu			
50	55	60	
aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg ctc gca gct			240
Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala			
65	70	75	80
agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac gtc gat ttg			288
Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu			
85	90	95	
ctc gtt ggg gcg gct gct ctc tgt tcc gct atg tac gtg ggg gat ctc			336
Leu Val Gly Ala Ala Leu Cys Ser Ala Met Tyr Val Gly Asp Leu			
100	105	110	
tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc tcg cct cgc			384
Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile Ser Pro Arg			
115	120	125	
cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat ccc ggc cac			432
Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His			
130	135	140	
ata aca ggt cac cgt atg gct tgg gat atg atg atg aac tgg tcg cct			480
Ile Thr Gly His Arg Met Ala Trp Asp Met Met Asn Trp Ser Pro			
145	150	155	160
aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca caa gct gtc			528
Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val			
165	170	175	
gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg ggc ctc gcc			576
Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala			
180	185	190	
tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg att gtg atg cta			624
Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu			
195	200	205	
ctc ttt gct ctc taataag			642
Leu Phe Ala Leu			
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<211> 212  
<212> PRT  
<213> Hepatitis C virus

<400> 4

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Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala  
35 40 45

Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu  
50 55 60

Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala  
65 70 75 80

Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu  
85 90 95

Leu Val Gly Ala Ala Ala Leu Cys Ser Ala Met Tyr Val Gly Asp Leu  
100 105 110

Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile Ser Pro Arg  
115 120 125

Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His  
130 135 140

Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser Pro  
145 150 155 160

Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val  
165 170 175

Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala  
180 185 190

Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu  
195 200 205

Leu Phe Ala Leu  
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<210> 5

<211> 795  
<212> DNA  
<213> Hepatitis C virus

<220>  
<221> CDS  
<222> 1..792

<220>  
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<222> 1..789

<400> 5

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gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg	96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg ccc ggt tgc tct ttc atc ttc ctc ttg gct ttg	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc acg gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg	480
Val Asp Leu Leu Val Gly Ala Ala Phe Cys Ser Ala Met Tyr Val	
145 150 155 160	
ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc	528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile	
165 170 175	
tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat	576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr	
180 185 190	

ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg atg aac	624
Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn	
195 200 205	
tgg tcg cct aca acg gcc ctg gtg gta tcg cag ctg ctc cgg atc cca	672
Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro	
210 215 220	
caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg	720
Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala	
225 230 235 240	
ggt ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag gtt ttg att	768
Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile	
245 250 255	
gtg atg cta ctc ttt gct ccc taatag	795
Val Met Leu Leu Phe Ala Pro	
260	
<210> 6	
<211> 263	
<212> PRT	
<213> Hepatitis C virus	
 <400> 6	
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20 25 30	
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	
130 135 140	
Val Asp Leu Leu Val Gly Ala Ala Phe Cys Ser Ala Met Tyr Val	
145 150 155 160	

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile  
 165 170 175  
 Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr  
 180 185 190  
 Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn  
 195 200 205  
 Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro  
 210 215 220  
 Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala  
 225 230 235 240  
 Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Ile  
 245 250 255  
 Val Met Leu Leu Phe Ala Pro  
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<210> 7

<211> 633

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..630

<220>

<221> mat\_peptide

<222> 1..627

<400> 7

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu	
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atg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggt gct gcc aga	96
Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gaa gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg cct ggt tgc tct ttc tct atc ttc ctc ttg gct tta	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt ctg acc att cca gct tcc gct tat gag gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	

65	70	75	80														
tcc	ggg	atg	tac	cat	gtc	acg	aac	gac	tgc	tcc	aac	tca	agc	att	gtg		288
Ser	Gly	Met	Tyr	His	Val	Thr	Asn	Asp	Cys	Ser	Asn	Ser	Ser	Ile	Val		
																85	
																90	
																95	
tat	gag	gca	gct	gac	atg	atc	atg	cac	acc	ccc	ggg	tgc	gtg	ccc	tgc		336
Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr	Pro	Gly	Cys	Val	Pro	Cys		
																100	
																105	
																110	
gtt	cgg	gag	aac	aac	tct	tcc	cgc	tgc	tgg	gta	gct	ctc	acc	ccc	acg		384
Val	Arg	Glu	Asn	Asn	Ser	Ser	Arg	Cys	Trp	Val	Ala	Leu	Thr	Pro	Thr		
																115	
																120	
																125	
ctc	gca	gct	agg	aac	gcc	agc	gtc	ccc	act	acg	aca	ata	cga	cgc	cac		432
Leu	Ala	Ala	Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr	Ile	Arg	Arg	Arg	His		
																130	
																135	
																140	
gtc	gat	ttg	ctc	gtt	ggg	gct	gct	ttc	tgt	tcc	gct	atg	tac	gtg		480	
Val	Asp	Leu	Leu	Val	Gly	Ala	Ala	Ala	Phe	Cys	Ser	Ala	Met	Tyr	Val		
																145	
																150	
																155	
																160	
ggg	gat	ctc	tgc	gga	tct	gtc	ttc	ctc	gtc	tcc	cag	ctg	ttc	acc	atc		528
Gly	Asp	Leu	Cys	Gly	Ser	Val	Phe	Leu	Val	Ser	Gln	Leu	Phe	Thr	Ile		
																165	
																170	
																175	
tcg	cct	cgc	cgg	cat	gag	acg	gtg	cag	gac	tgc	aat	tgc	tca	atc	tat		576
Ser	Pro	Arg	Arg	His	Glu	Thr	Val	Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr		
																180	
																185	
																190	
ccc	ggc	cac	ata	aca	ggt	cac	cgt	atg	gct	tgg	gat	atg	atg	atg	aac		624
Pro	Gly	His	Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn		
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																200	
																205	
tgg	taatag																633
Trp																	

<210> 8

<211> 209

<212> PRT

<213> Hepatitis C virus

<400> 8

Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu

1

5

10

15

Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg

20

25

30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala

35

40

45

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu  
50 55 60

Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr  
115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His  
130 135 140

Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val  
145 150 155 160

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile  
165 170 175

Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr  
180 185 190

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn  
195 200 205

Trp

<210> 9

<211> 483

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..480

<220>

<221> mat\_peptide

<222> 1..477

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ctg acc ata cca gct tcc gct tat gaa gtg cgc aac gtg tcc ggg gtg 96  
Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val  
20 25 30

tac cat gtc acg aac gac tgc tcc aac tca agc ata gtg tat gag gca Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala 35 40 45	144
gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu 50 55 60	192
ggc aac tcc tcc cgt tgc tgg gtg gcg ctc act ccc acg ctc gcg gcc Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala 65 70 75 80	240
agg aac gcc agc gtc ccc aca acg aca ata cga cgc cac gtc gat ttg Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu 85 90 95	288
ctc gtt ggg gct gct ttc tgt tcc gct atg tac gtg ggg gat ctc Leu Val Gly Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu 100 105 110	336
tgc gga tct gtt ttc ctt gtt tcc cag ctg ttc acc ttc tca cct cgc Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg 115 120 125	384
cgg cat caa aca gta cag gac tgc aac tgc tca atc tat ccc ggc cat Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His 130 135 140	432
gta tca ggt cac cgc atg gct tgg gat atg atg aac tgg tcc taatag Val Ser Gly His Arg Met Ala Trp Asp Met Met Asn Trp Ser 145 150 155	483

<210> 10

<211> 159

<212> PRT

<213> Hepatitis C virus

<400> 10

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Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala 35 40 45	
Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu 50 55 60	
Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala 65 70 75 80	

Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu  
85 90 95

Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu  
100 105 110

Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg  
115 120 125

Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His  
130 135 140

Val Ser Gly His Arg Met Ala Trp Asp Met Met Asn Trp Ser  
145 150 155

<210> 11

<211> 480

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..477

<220>

<221> mat\_peptide

<222> 1..474

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ctg acc ata cca gct tcc gct tat gaa gtg cgc aac gtg tcc ggg gtg 96  
Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val Ser Gly Val  
20 25 30

tac cat gtc acg aac gac tgc tcc aac tca agc ata gtg tat gag gca 144  
Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala  
35 40 45

gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc gtt cgg gag 192  
Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu  
50 55 60

ggc aac tcc tcc cgt tgc tgg gtg gcg ctc act ccc acg ctc gcg gcc 240  
Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala  
65 70 75 80

agg aac gcc agc gtc ccc aca acg aca ata cga cgc cac gtc gat ttg 288  
Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu  
85 90 95

ctc gtt ggg gct gct ttc tgt tcc gct atg tac gtg ggg gat ctc 336  
Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu  
100 105 110

tgc gga tct ttc ctt gtt tcc cag ctg ttc acc ttc tca cct cgc 384  
Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg  
115 120 125

cgg cat caa aca gta cag gac tgc aac tgc tca atc tat ccc ggc cat 432  
Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His  
130 135 140

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<212> PRT

<213> Hepatitis C virus

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Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala  
35 40 45

Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val Arg Glu  
50 55 60

Gly Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu Ala Ala  
65 70 75 80

Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu  
85 90 95

Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly Asp Leu  
100 105 110

Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Phe Ser Pro Arg  
115 120 125

Arg His Gln Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His  
130 135 140

Val Ser Gly His Arg Met Ala Trp Asp Met Met Asn Trp  
145 150 155

<210> 13

<211> 636

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS  
<222> 1..633

<220>  
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<222> 1..630

<400> 13

atg ctg ggt aag gcc atc gat acc ctt acg tgc ggc ttc gcc gac ctc	48
Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu	
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gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg	96
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
gcc ctg gcg cat ggc gtc cggtt ctg gaa gac ggc gtg aac tat gca	144
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
aca ggg aat ttg cct ggt tgc tct ttc atc ttc ctc ttg gct tta	192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
ctg tcc tgt cta acc att cca gct tcc gct tac gag gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gcg gct agg aac gcc agc atc ccc act aca aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt tcc gct atg tac gtg	480
Val Asp Leu Leu Val Gly Ala Ala Phe Cys Ser Ala Met Tyr Val	
145 150 155 160	
ggg gat ctc tgc gga tct gtc ttc ctc gtc tcc cag ctg ttc acc atc	528
Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile	
165 170 175	
tcg cct cgc cgg cat gag acg gtg cag gac tgc aat tgc tca atc tat	576
Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr	
180 185 190	
ccc ggc cac ata acg ggt cac cgt atg gct tgg gat atg atg aac	624

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn  
195 200 205

tgg tac taatag 636  
Trp Tyr  
210

<210> 14

<211> 210  
<212> PRT  
<213> Hepatitis C virus

<400> 14

Met Leu Gly Lys Ala Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu  
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20 25 30

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala  
35 40 45

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu  
50 55 60

Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr  
115 120 125

Leu Ala Ala Arg Asn Ala Ser Ile Pro Thr Thr Ile Arg Arg His  
130 135 140

Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val  
145 150 155 160

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile  
165 170 175

Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr  
180 185 190

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn  
195 200 205

Trp Tyr  
210

<210> 15

<211> 26

<212> DNA

<213> Hepatitis C virus

<400> 15

atgcccggtt gcttttctc tatctt 26

<210> 16

<211> 26

<212> DNA

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<210> 17

<211> 30

<212> DNA

<213> Hepatitis C virus

<220>

<221> misc\_feature

<223>/note="antisense"

<400> 17

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<212> DNA

<213> Hepatitis C virus

<400> 18

ctattaccag ttcatcatca tatccca 27

<210> 19

<211> 36

<212> DNA

<213> Hepatitis C virus

<400> 19

atacgacgcc acgtcgattc ccagctgttc accatc

36

<210> 20

<211> 36

<212> DNA

<213> Hepatitis C virus

<220>

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<223>/note="antisense"

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36

<210> 21

<211> 723

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..720

<220>

<221> mat\_peptide

<222> 1..717

<400> 21

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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu  
1 5 10 15

48

gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg  
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg  
20 25 30

96

gcc ctg ggc cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca  
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala  
35 40 45

144

aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg  
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu  
50 55 60

192

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg  
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

240

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg  
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

288

tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cggtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg	480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val	
145 150 155 160	
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt	528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg	
165 170 175	
atg gct tgg gat atg atg aac tgg tcg cct aca acg gcc ctg gtg	576
Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val	
180 185 190	
gta tcg cag ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg	624
Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala	
195 200 205	
ggg gcc cat tgg gga gtc ctg gcg ggt ctc gcc tac tat tcc atg gtg	672
Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val	
210 215 220	
ggg aac tgg gct aag gtt ttg att gtg atg cta ctc ttt gct ccc taatag	723
Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro	
225 230 235	
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Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr  
115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His  
130 135 140

Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val  
145 150 155 160

Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg  
165 170 175

Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val  
180 185 190

Val Ser Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala  
195 200 205

Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val  
210 215 220

Gly Asn Trp Ala Lys Val Leu Ile Val Met Leu Leu Phe Ala Pro  
225 230 235

<210> 23

<211> 561

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<213> Hepatitis C virus

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<222> 1..558

<220>

<221> mat\_peptide

<222> 1..555

<400> 23

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gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg  
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg  
20 25 30 96

gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca 144

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala			
35	40	45	
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg			192
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu			
50	55	60	
ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg			240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val			
65	70	75	80
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg			288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val			
85	90	95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc			336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys			
100	105	110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg			384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr			
115	120	125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac			432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His			
130	135	140	
gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg			480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val			
145	150	155	160
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt			528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg			
165	170	175	
atg gct tgg gat atg atg aac tgg taatag			561
Met Ala Trp Asp Met Met Asn Trp			
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Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg			
20	25	30	
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala			
35	40	45	
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu			

50	55	60	
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val			
65	70	75	80
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val			
85	90	95	
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys			
100	105	110	
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr			
115	120	125	
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His			
130	135	140	
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val			
145	150	155	160
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg			
165	170	175	
Met Ala Trp Asp Met Met Asn Trp			
180	185		
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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu			
1	5	10	15
gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg			
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg			
20	25	30	96
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca			
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala			
35	40	45	144
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg			
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu			
50	55	60	192

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg	480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val	
145 150 155 160	
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt	528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg	
165 170 175	
atg gct tgg gat atg atg aac tgg tcg cct aca acg gcc ctg gtg	576
Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val	
180 185 190	
gta tcg cag ctg ctc cgg atc ctc taatag	606
Val Ser Gln Leu Leu Arg Ile Leu	
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20 25 30	
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	

65	70	75	80
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val			
85	90	95	
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys			
100	105	110	
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr			
115	120	125	
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His			
130	135	140	
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val			
145	150	155	160
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg			
165	170	175	
Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val			
180	185	190	
Val Ser Gln Leu Leu Arg Ile Leu			
195	200		
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Met Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu			
1	5	10	15
gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg			
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg			
20	25	30	
gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca			
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala			
35	40	45	
aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg			
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu			
50	55	60	

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg	240
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	
tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg	288
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
85 90 95	
tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc	336
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys	
100 105 110	
gtt cgg gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg	384
Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr	
115 120 125	
ctc gca gct agg aac gcc agc gtc ccc acc acg aca ata cga cgc cac	432
Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His	
130 135 140	
gtc gat tcc cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg	480
Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val	
145 150 155 160	
cag gac tgc aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt	528
Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg	
165 170 175	
atg gct tgg gat atg atg aac tgg tcg cct aca acg gcc ctg gtg	576
Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val	
180 185 190	
gta tcg cag ctg ctc cgg atc gtg atc gag ggc aga cac cat cac cac	624
Val Ser Gln Leu Leu Arg Ile Val Ile Glu Gly Arg His His His His	
195 200 205	
cat cac taatag	636
His His	
210	
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Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu  
50 55 60

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr  
115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Ile Arg Arg His  
130 135 140

Val Asp Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val  
145 150 155 160

Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg  
165 170 175

Met Ala Trp Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val  
180 185 190

Val Ser Gln Leu Leu Arg Ile Val Ile Glu Gly Arg His His His His  
195 200 205

His His  
210

<210> 29

<211> 630

<212> DNA

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<220>

<221> CDS

<222> 1..627

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<221> mat\_peptide

<222> 1..624

<400> 29

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ggg tac atc ccg ctc gtc ggc gct ccc gta gga ggc gtc gca aga gcc 96  
Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala  
20 25 30

ctt gcg cat ggc gtg agg gcc ctt gaa gac ggg ata aat ttc gca aca Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr 35 40 45	144
ggg aat ttg ccc ggt tgc tcc ttt tct att ttc ctt ctc gct ctg ttc Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe 50 55 60	192
tct tgc tta att cat cca gca gct agt cta gag tgg cgg aat acg tct Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser 65 70 75 80	240
ggc ctc tat gtc ctt acc aac gac tgt tcc aat agc agt att gtg tac Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr 85 90 95	288
gag gcc gat gac gtt att ctg cac aca ccc ggc tgc ata cct tgt gtc Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val 100 105 110	336
cag gac ggc aat aca tcc acg tgc tgg acc cca gtg aca cct aca gtg Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val 115 120 125	384
gca gtc aag tac gtc gga gca acc acc gct tcg ata cgc agt cat gtg Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val 130 135 140	432
gac cta tta gtg ggc gcg gcc acg atg tgc tct gcg ctc tac gtg ggt Asp Leu Leu Val Gly Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly 145 150 155 160	480
gac atg tgt ggg gct gtc ttc ctc gtg gga caa gcc ttc acg ttc aga Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg 165 170 175	528
cct cgt cgc cat caa acg gtc cag acc tgt aac tgc tcg ctg tac cca Pro Arg Arg His Gln Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro 180 185 190	576
ggc cat ctt tca gga cat cga atg gct tgg gat atg atg aac tgg Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp 195 200 205	624
taatag	630
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Gly Tyr Ile Pro Leu Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala  
20 25 30

Leu Ala His Gly Val Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr  
35 40 45

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe  
50 55 60

Ser Cys Leu Ile His Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser  
65 70 75 80

Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr  
85 90 95

Glu Ala Asp Asp Val Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val  
100 105 110

Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val  
115 120 125

Ala Val Lys Tyr Val Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val  
130 135 140

Asp Leu Leu Val Gly Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly  
145 150 155 160

Asp Met Cys Gly Ala Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg  
165 170 175

Pro Arg Arg His Gln Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro  
180 185 190

Gly His Leu Ser Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp  
195 200 205

<210> 31

<211> 630

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..627

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<221> mat\_peptide

<222> 1..624

<400> 31

atg ggt aag gtc atc gat acc cta acg tgc gga ttc gcc gat ctc atg  
Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met  
1 5 10 15

ggg tat atc ccg ctc gta ggc ggc ccc att ggg ggc gtc gca agg gct

48

96

Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala			
20	25	30	
ctc gca cac ggt gtg agg gtc ctt gag gac ggg gta aac tat gca aca		144	
Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr			
35	40	45	
ggg aat tta ccc ggt tgc tct ttc tct atc ttt att ctt gct ctt ctc		192	
Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu			
50	55	60	
tcg tgt ctg acc gtt ccg gcc tct gca gtt ccc tac cga aat gcc tct		240	
Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser			
65	70	75	80
ggg att tat cat gtt acc aat gat tgc cca aac tct tcc ata gtc tat		288	
Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr			
85	90	95	
gag gca gat aac ctg atc cta cac gca cct ggt tgc gtc cct tgt gtc		336	
Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val			
100	105	110	
atg aca ggt aat gtg agt aga tgc tgg gtc caa att acc cct aca ctg		384	
Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu			
115	120	125	
tca gcc ccg agc ctc gga gca gtc acg gct cct ctt cgg aga gcc gtt		432	
Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val			
130	135	140	
gac tac cta gcg gga ggg gct gcc ctc tgc tcc gcg tta tac gta gga		480	
Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly			
145	150	155	160
gac gcg tgt ggg gca cta ttc ttg gta ggc caa atg ttc acc tat agg		528	
Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg			
165	170	175	
cct cgc cag cac gct acg gtg cag aac tgc aac tgt tcc att tac agt		576	
Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser			
180	185	190	
ggc cat gtt acc ggc cac cgg atg gca tgg gat atg atg aac tgg		624	
Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp			
195	200	205	
taatag		630	

<210> 32  
<211> 208  
<212> PRT  
<213> Hepatitis C virus

<400> 32

Met Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu Met  
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Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile Gly Gly Val Ala Arg Ala  
20 25 30

Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala Thr  
35 40 45

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Ile Leu Ala Leu Leu  
50 55 60

Ser Cys Leu Thr Val Pro Ala Ser Ala Val Pro Tyr Arg Asn Ala Ser  
65 70 75 80

Gly Ile Tyr His Val Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr  
85 90 95

Glu Ala Asp Asn Leu Ile Leu His Ala Pro Gly Cys Val Pro Cys Val  
100 105 110

Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile Thr Pro Thr Leu  
115 120 125

Ser Ala Pro Ser Leu Gly Ala Val Thr Ala Pro Leu Arg Arg Ala Val  
130 135 140

Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys Ser Ala Leu Tyr Val Gly  
145 150 155 160

Asp Ala Cys Gly Ala Leu Phe Leu Val Gly Gln Met Phe Thr Tyr Arg  
165 170 175

Pro Arg Gln His Ala Thr Val Gln Asn Cys Asn Cys Ser Ile Tyr Ser  
180 185 190

Gly His Val Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp  
195 200 205

<210> 33

<211> 23

<212> DNA

<213> Hepatitis C virus

<400> 33

tggatatga tgatgaactg gtc

23

<210> 34

<211> 30

<212> DNA

<213> Hepatitis C virus

<400> 34

ctattatggt ggtaagccac agagcaggag

30

<210> 35

<211> 1476

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..1473

<220>

<221> mat\_peptide

<222> 1..1470

<400> 35

tgg gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg gta tcg  
Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser  
1 5 10 15

48

cag ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc  
Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala  
20 25 30

96

cat tgg gga gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac  
His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn  
35 40 45

144

tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg  
Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly  
50 55 60

192

cat acc cgc gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt  
His Thr Arg Val Ser Gly Gly Ala Ala Ser Asp Thr Arg Gly Leu  
65 70 75 80

240

gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac  
Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn  
85 90 95

288

acc aac ggc agt tgg cac atc aac agg act gcc ctg aac tgc aac gac  
Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp  
100 105 110

336

tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc  
Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe  
115 120 125

384

aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac  
Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp  
130 135 140

432

aag ttc gct cag ggg tgg ggt ccc ctc act tac act gag cct aac agc  
Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser

480

145	150	155	160	
tcg gac cag agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt				528
Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly				
165	170	175		
att gta ccc gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg				576
Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro				
180	185	190		
agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat				624
Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr				
195	200	205		
aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc aac aac acg ccg				672
Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg				
210	215	220		
ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg				720
Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly				
225	230	235	240	
ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc				768
Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly				
245	250	255		
aac aac acc ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag				816
Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu				
260	265	270		
gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt				864
Ala Thr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys				
275	280	285		
atg gtt cat tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac				912
Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn				
290	295	300		
ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg				960
Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg				
305	310	315	320	
ttc gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag				1008
Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu				
325	330	335		
gac agg gat aga tca gag ctt agc ccg ctg ctg ctg tct aca aca gag				1056
Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Ser Thr Thr Glu				
340	345	350		
tgg cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc				1104
Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr				
355	360	365		
ggc ctg atc cac ctc cat cag aac atc gtg gac gtg caa tac ctg tac				1152
Gly Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr				
370	375	380		

ggt gta ggg tcg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc		1200	
Gly Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val			
385	390	395	400
ctg ttg ctc ttc ctt ctc ctg gca gac gcg cgc atc tgc gcc tgc tta		1248	
Leu Leu Leu Phe Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu			
405	410	415	
tgg atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg		1296	
Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu			
420	425	430	
gtg gtc ctc aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc		1344	
Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser			
435	440	445	
ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc		1392	
Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val			
450	455	460	
cct ggt gcg gca tac gcc ttc tat ggc gtg tgg ccg ctg ctc ctg ctt		1440	
Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu			
465	470	475	480
ctg ctg gcc tta cca cca cga gct tat gcc tagtaa		1476	
Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala			
485	490		
<210> 36			
<211> 490			
<212> PRT			
<213> Hepatitis C virus			
<400> 36			
Trp Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser			
1	5	10	15
Gln Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala			
20	25	30	
His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn			
35	40	45	
Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly			
50	55	60	
His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu			
65	70	75	80
Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn			
85	90	95	
Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp			
100	105	110	

Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe  
115 120 125  
Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp  
130 135 140  
Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser  
145 150 155 160  
Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly  
165 170 175  
Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro  
180 185 190  
Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr  
195 200 205  
Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg  
210 215 220  
Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly  
225 230 235 240  
Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly  
245 250 255  
Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu  
260 265 270  
Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys  
275 280 285  
Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn  
290 295 300  
Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg  
305 310 315 320  
Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu  
325 330 335  
Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu  
340 345 350  
Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr  
355 360 365  
Gly Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr  
370 375 380  
Gly Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val  
385 390 395 400  
Leu Leu Leu Phe Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu  
405 410 415

Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu  
420 425 430

Val Val Leu Asn Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser  
435 440 445

Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val  
450 455 460

Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu  
465 470 475 480

Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala  
485 490

<210> 37

<211> 1021

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1018

<220>

<221> mat\_peptide

<222> 2..1015

<400> 37

g atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga 46  
Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly  
1 5 10 15

gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag 94  
Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys  
20 25 30

gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc 142  
Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg  
35 40 45

gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc 190  
Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu  
50 55 60

ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc 238  
Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly  
65 70 75

agt tgg cac atc aac agg act gcc ctg aac tgc aac gac tcc ctc caa 286  
Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln  
80 85 90 95

aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc aac tcg tct 334

Thr	Gly	Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	Asn	Ser	Ser	
100								105					110		
														382	
gga	tgc	cca	gag	cgc	ttg	gcc	agc	tgt	cgc	tcc	atc	gac	aag	ttc	gct
Gly	Cys	Pro	Glu	Arg	Leu	Ala	Ser	Cys	Arg	Ser	Ile	Asp	Lys	Phe	Ala
115								120					125		
														430	
cag	ggg	tgg	ggt	ccc	ctc	act	tac	act	gag	cct	aac	agc	tcg	gac	cag
Gln	Gly	Trp	Gly	Pro	Leu	Thr	Tyr	Thr	Glu	Pro	Asn	Ser	Ser	Asp	Gln
130								135					140		
														478	
agg	ccc	tac	tgc	tgg	cac	tac	gcg	cct	cga	ccg	tgt	ggt	att	gta	ccc
Arg	Pro	Tyr	Cys	Trp	His	Tyr	Ala	Pro	Arg	Pro	Cys	Gly	Ile	Val	Pro
145								150					155		
														526	
gcg	tct	cag	gtg	tgc	ggt	cca	gtg	tat	tgc	ttc	acc	ccg	agc	cct	gtt
Ala	Ser	Gln	Val	Cys	Gly	Pro	Val	Tyr	Cys	Phe	Thr	Pro	Ser	Pro	Val
160								165			170				175
gtg	gtg	ggg	acg	acc	gat	cgg	ttt	ggt	gtc	ccc	acg	tat	aac	tgg	ggg
Val	Val	Gly	Thr	Asp	Arg	Phe	Gly	Val	Pro	Thr	Tyr	Asn	Trp	Gly	
180								185					190		
														574	
gcg	aac	gac	tcg	gat	gtg	ctg	att	ctc	aac	aac	acg	ccg	ccg	ccg	cga
Ala	Asn	Asp	Ser	Asp	Val	Leu	Ile	Leu	Asn	Asn	Thr	Arg	Pro	Pro	Arg
195								200					205		
														622	
ggc	aac	tgg	ttc	ggc	tgt	aca	tgg	atg	aat	ggc	act	ggg	ttc	acc	aag
Gly	Asn	Trp	Phe	Gly	Cys	Thr	Trp	Met	Asn	Gly	Thr	Gly	Phe	Thr	Lys
210								215					220		
														670	
acg	tgt	ggg	ggc	ccc	ccg	tgc	aac	atc	ggg	ggg	gcc	ggc	aac	aac	acc
Thr	Cys	Gly	Gly	Pro	Pro	Cys	Asn	Ile	Gly	Gly	Ala	Gly	Asn	Asn	Thr
225								230					235		
														718	
ttg	acc	tgc	ccc	act	gac	tgt	ttt	cg	aag	cac	ccc	gag	gcc	acc	tac
Leu	Thr	Cys	Pro	Thr	Asp	Cys	Phe	Arg	Lys	His	Pro	Glu	Ala	Thr	Tyr
240								245			250				255
														766	
gcc	aga	tgc	ggt	tct	ggg	ccc	tgg	ctg	aca	cct	agg	tgt	atg	gtt	cat
Ala	Arg	Cys	Gly	Ser	Gly	Pro	Trp	Leu	Thr	Pro	Arg	Cys	Met	Val	His
260								265					270		
														814	
tac	cca	tat	agg	ctc	tgg	cac	tac	ccc	tgc	act	gtc	aac	ttc	acc	atc
Tyr	Pro	Tyr	Arg	Leu	Trp	His	Tyr	Pro	Cys	Thr	Val	Asn	Phe	Thr	Ile
275								280					285		
														862	
ttc	aag	gtt	agg	atg	tac	gtg	ggg	ggc	gtg	gag	cac	agg	ttc	gaa	gcc
Phe	Lys	Val	Arg	Met	Tyr	Val	Gly	Gly	Val	Glu	His	Arg	Phe	Glu	Ala
290								295					300		
														910	
gca	tgc	aat	tgg	act	cga	gga	gag	cgt	tgt	gac	ttg	gag	gac	agg	gat
Ala	Cys	Asn	Trp	Thr	Arg	Gly	Glu	Arg	Cys	Asp	Leu	Glu	Asp	Arg	Asp
305								310					315		
														958	
aga	tca	gag	ctt	agc	ccg	ctg	ctg	tct	aca	aca	gag	tgg	cag	agt	
Arg	Ser	Glu	Leu	Ser	Pro	Leu	Leu	Leu	Ser	Thr	Thr	Glu	Trp	Gln	Ser
320								325					330		
														1006	

ggc aga gct taatta  
Gly Arg Ala

1021

<210> 38

<211> 338  
<212> PRT  
<213> Hepatitis C virus

<400> 38

Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val  
1 5 10 15

Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val  
20 25 30

Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val  
35 40 45

Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe  
50 55 60

Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser  
65 70 75 80

Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr  
85 90 95

Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly  
100 105 110

Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln  
115 120 125

Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg  
130 135 140

Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala  
145 150 155 160

Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val  
165 170 175

Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala  
180 185 190

Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly  
195 200 205

Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr  
210 215 220

Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu  
225 230 235 240

Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala  
245 250 255

Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr  
260 265 270

Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe  
275 280 285

Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala  
290 295 300

Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg  
305 310 315 320

Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ser Gly  
325 330 335

Arg Ala

<210> 39

<211> 1034

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 2..1032

<220>

<221> mat\_peptide

<222> 2..1029

<400> 39

g atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat tgg gga 46  
Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly  
1 5 10 15

gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg gct aag 94  
Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys  
20 25 30

gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat acc cgc 142  
Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg  
35 40 45

gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg tcc ctc 190  
Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu  
50 55 60

ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc aac ggc 238  
Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly

65	70	75	
agt tgg cac atc aac agg act gcc ctg aac tgc aac gac tcc ctc caa			286
Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln			
80	85	90	95
aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc aac tcg tct			334
Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser			
100	105	110	
gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac aag ttc gct			382
Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala			
115	120	125	
cag ggg tgg ggt ccc ctc act tac act gag cct aac agc tcg gac cag			430
Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln			
130	135	140	
agg ccc tac tgc tgg cac tac gcg cct cga ccg tgt ggt att gta ccc			478
Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro			
145	150	155	
gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg agc cct gtt			526
Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val			
160	165	170	175
gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat aac tgg ggg			574
Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly			
180	185	190	
gcg aac gac tcg gat gtg ctg att ctc aac aac acg cgg ccg ccg cga			622
Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg			
195	200	205	
ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg ttc acc aag			670
Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys			
210	215	220	
acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac aac acc			718
Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr			
225	230	235	
ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag gcc acc tac			766
Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr			
240	245	250	255
gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt atg gtt cat			814
Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His			
260	265	270	
tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac ttc acc atc			862
Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile			
275	280	285	
ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc gaa gcc			910
Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala			
290	295	300	

gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac agg gat	958
Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp	
305 310 315	
aga tca gag ctt agc ccg ctg ctg ctg tct aca aca ggt gat cga ggg	1006
Arg Ser Glu Leu Ser Pro Leu Leu Ser Thr Thr Gly Asp Arg Gly	
320 325 330 335	
cag aca cca tca cca tca cta at ag	1034
Gln Thr Pro Ser Pro Pro Ser Leu	
340	
<210> 40	
<211> 343	
<212> PRT	
<213> Hepatitis C virus	
<400> 40	
Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val	
1 5 10 15	
Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val	
20 25 30	
Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val	
35 40 45	
Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe	
50 55 60	
Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser	
65 70 75 80	
Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr	
85 90 95	
Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly	
100 105 110	
Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln	
115 120 125	
Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg	
130 135 140	
Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala	
145 150 155 160	
Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val	
165 170 175	
Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala	
180 185 190	
Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly	
195 200 205	

Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr  
210 215 220

Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu  
225 230 235 240

Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala  
245 250 255

Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr  
260 265 270

Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe  
275 280 285

Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala  
290 295 300

Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg  
305 310 315 320

Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Gly Asp Arg Gly Gln  
325 330 335

Thr Pro Ser Pro Pro Ser Leu  
340

<210> 41

<211> 945

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..942

<220>

<221> mat\_peptide

<222> 1..939

<400> 41

atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc 48  
Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala  
1 5 10 15

ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc gat 96  
Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp  
20 25 30

acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc 144  
Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile  
35 40 45

cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc ctg 192  
Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu

50	55	60	
aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr 65	70	75	240
aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys 85	90	95	288
cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac act Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr 100	105	110	336
gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg cct Glu Pro Asn Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro 115	120	125	384
cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg tat Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr 130	135	140	432
tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly 145	150	155	480
gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu 165	170	175	528
aac aac acg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met 180	185	190	576
aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Pro Pro Cys Asn Ile 195	200	205	624
ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt cgg Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg 210	215	220	672
aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu 225	230	235	720
aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac ccc Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro 245	250	255	768
tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly 260	265	270	816
gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag cgt Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg 275	280	285	864

tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg ctg 912  
Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu  
290 295 300

tct aca aca gag tgg cag agc tta att aat tag 945  
Ser Thr Thr Glu Trp Gln Ser Leu Ile Asn  
305 310

<210> 42

<211> 314

<212> PRT

<213> Hepatitis C virus

<400> 42

Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala  
1 5 10 15

Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp  
20 25 30

Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile  
35 40 45

Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu  
50 55 60

Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr  
65 70 75 80

Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys  
85 90 95

Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr  
100 105 110

Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro  
115 120 125

Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr  
130 135 140

Cys Phe Thr Pro Ser Pro Val Val Gly Thr Thr Asp Arg Phe Gly  
145 150 155 160

Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu  
165 170 175

Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met  
180 185 190

Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile  
195 200 205

Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg  
210 215 220

<210> 43

<211> 961

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..958

<220>

<221> mat peptide

<222> 1..955

<400> 43

atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt gcc  
Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala  
1 5 10 . 15

48

ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc gat  
Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp  
20 25 30

96

acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa atc  
 Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile  
 35 40 45

144

cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc ctg  
Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu  
50 55 60

192

```

aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc tac
Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr
65 70 75 80

```

240

aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc tgt  
Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys

85	90	95	
cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac act Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr 100	105	110	336
gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg cct Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro 115	120	125	384
cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg tat Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr 130	135	140	432
tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt ggt Cys Phe Thr Pro Ser Pro Val Val Gly Thr Thr Asp Arg Phe Gly 145	150	155	480
gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att ctc Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu 165	170	175	528
aac aac acg cgg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg atg Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met 180	185	190	576
aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac atc Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Pro Pro Cys Asn Ile 195	200	205	624
ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt cgg Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg 210	215	220	672
aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg ctg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu 225	230	235	720
aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac ccc Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro 245	250	255	768
tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg ggc Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly 260	265	270	816
gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag cgt Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg 275	280	285	864
tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg ctg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu 290	295	300	912
tct aca aca ggt gat cga ggg cag aca cca tca cca tca cta a Ser Thr Thr Gly Asp Arg Gly Gln Thr Pro Ser Pro Pro Ser Leu 305	310	315	958

tag 961  
<210> 44

<211> 319

<212> PRT

<213> Hepatitis C virus

<400> 44

Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe Ala  
1 5 10 15

Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp  
20 25 30

Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile  
35 40 45

Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu  
50 55 60

Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr  
65 70 75 80

Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys  
85 90 95

Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr  
100 105 110

Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro  
115 120 125

Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr  
130 135 140

Cys Phe Thr Pro Ser Pro Val Val Gly Thr Thr Asp Arg Phe Gly  
145 150 155 160

Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu  
165 170 175

Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met  
180 185 190

Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile  
195 200 205

Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg  
210 215 220

Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu  
225 230 235 240

Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro

245	250	255
Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly		
260	265	270
Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg		
275	280	285
Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu		
290	295	300
Ser Thr Thr Gly Asp Arg Gly Gln Thr Pro Ser Pro Pro Ser Leu		
305	310	315
<210> 45		
<211> 1395		
<212> DNA		
<213> Hepatitis C virus		
<220>		
<221> CDS		
<222> 1..1392		
<220>		
<221> mat_peptide		
<222> 1..1389		
<400> 45		
atg gtg gcg ggg gcc cat tgg gga gtc ctg gcg ggc ctc gcc tac tat		
Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr		
1	5	10
		15
tcc atg gtg ggg aac tgg gct aag gtt ttg gtt gtg atg cta ctc ttt		
Ser Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe		
20	25	30
96		
gcc ggc gtc gac ggg cat acc cgc gtg tca gga ggg gca gca gcc tcc		
Ala Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ser		
35	40	45
144		
gat acc agg ggc ctt gtg tcc ctc ttt agc ccc ggg tcg gct cag aaa		
Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys		
50	55	60
192		
atc cag ctc gta aac acc aac ggc agt tgg cac atc aac agg act gcc		
Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala		
65	70	75
		80
240		
ctg aac tgc aac gac tcc ctc caa aca ggg ttc ttt gcc gca cta ttc		
Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe		
85	90	95
288		
tac aaa cac aaa ttc aac tcg tct gga tgc cca gag cgc ttg gcc agc		
Tyr Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser		
100	105	110
336		

tgt cgc tcc atc gac aag ttc gct cag ggg tgg ggt ccc ctc act tac Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr 115 120 125	384
act gag cct aac agc tcg gac cag agg ccc tac tgc tgg cac tac gcg Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala 130 135 140	432
cct cga ccg tgt ggt att gta ccc gcg tct cag gtg tgc ggt cca gtg Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val 145 150 155 160	480
tat tgc ttc acc ccg agc cct gtt gtg gtg ggg acg acc gat cgg ttt Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe 165 170 175	528
ggt gtc ccc acg tat aac tgg ggg gcg aac gac tcg gat gtg ctg att Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile 180 185 190	576
ctc aac aac acg ccg ccg cga ggc aac tgg ttc ggc tgt aca tgg Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp 195 200 205	624
atg aat ggc act ggg ttc acc aag acg tgt ggg ggc ccc ccg tgc aac Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn 210 215 220	672
atc ggg ggg gcc ggc aac aac acc ttg acc tgc ccc act gac tgt ttt Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe 225 230 235 240	720
cgg aag cac ccc gag gcc acc tac gcc aga tgc ggt tct ggg ccc tgg Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp 245 250 255	768
ctg aca cct agg tgt atg gtt cat tac cca tat agg ctc tgg cac tac Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr 260 265 270	816
ccc tgc act gtc aac ttc acc atc ttc aag gtt agg atg tac gtg ggg Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly 275 280 285	864
ggc gtg gag cac agg ttc gaa gcc gca tgc aat tgg act cga gga gag Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu 290 295 300	912
cgt tgt gac ttg gag gac agg gat aga tca gag ctt agc ccg ctg ctg Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu 305 310 315 320	960
ctg tct aca aca gag tgg cag ata ctg ccc tgt tcc ttc acc acc ctg Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu 325 330 335	1008

ccg gcc cta tcc acc ggc ctg atc cac ctc cat cag aac atc gtg gac	1056		
Pro Ala Leu Ser Thr Gly Leu Ile His Leu His Gln Asn Ile Val Asp			
340	345	350	
gtg caa tac ctg tac ggt gta ggg tcg gcg gtt gtc tcc ctt gtc atc	1104		
Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val Val Ser Leu Val Ile			
355	360	365	
aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc ctg gca gac gcg cgc	1152		
Lys Trp Glu Tyr Val Leu Leu Phe Leu Leu Ala Asp Ala Arg			
370	375	380	
atc tgc gcc tgc tta tgg atg atg ctg ctg ata gct caa gct gag gcc	1200		
Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala			
385	390	395	400
gcc tta gag aac ctg gtc ctc aat gcg gcg gcc gtc ggg gcg	1248		
Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala			
405	410	415	
cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt gct gcc tgg tac atc	1296		
His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile			
420	425	430	
aag ggc agg ctg gtc cct ggt gcg gca tac gcc ttc tat ggc gtc tgg	1344		
Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp			
435	440	445	
ccg ctg ctc ctg ctt ctg gcc tta cca cca cga gct tat gcc tagtaa	1395		
Pro Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala			
450	455	460	
<210> 46			
<211> 463			
<212> PRT			
<213> Hepatitis C virus			
<400> 46			
Met Val Ala Gly Ala His Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr			
1	5	10	15
Ser Met Val Gly Asn Trp Ala Lys Val Leu Val Val Met Leu Leu Phe			
20	25	30	
Ala Gly Val Asp Gly His Thr Arg Val Ser Gly Gly Ala Ala Ala Ser			
35	40	45	
Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys			
50	55	60	
Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His Ile Asn Arg Thr Ala			
65	70	75	80
Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe			
85	90	95	

Tyr Lys His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser  
100 105 110

Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr  
115 120 125

Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala  
130 135 140

Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln Val Cys Gly Pro Val  
145 150 155 160

Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Phe  
165 170 175

Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp Ser Asp Val Leu Ile  
180 185 190

Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp  
195 200 205

Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn  
210 215 220

Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe  
225 230 235 240

Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp  
245 250 255

Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr Arg Leu Trp His Tyr  
260 265 270

Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val Arg Met Tyr Val Gly  
275 280 285

Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu  
290 295 300

Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu  
305 310 315 320

Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu  
325 330 335

Pro Ala Leu Ser Thr Gly Leu Ile His Leu His Gln Asn Ile Val Asp  
340 345 350

Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val Val Ser Leu Val Ile  
355 360 365

Lys Trp Glu Tyr Val Leu Leu Phe Leu Leu Ala Asp Ala Arg  
370 375 380

Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile Ala Gln Ala Glu Ala  
385 390 395 400

Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala Ala Val Ala Gly Ala  
405 410 415

His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile  
420 425 430

Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp  
435 440 445

Pro Leu Leu Leu Leu Leu Ala Leu Pro Pro Arg Ala Tyr Ala  
450 455 460

<210> 47

<211> 2082

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..2079

<220>

<221> mat\_peptide

<222> 1..2076

<400> 47

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Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu  
1 5 10 15

gtg ggg tac att ccg ctc gtc ggc gcc ccc cta ggg ggc gct gcc agg 96  
Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg  
20 25 30

gcc ctg gcg cat ggc gtc cgg gtt ctg gag gac ggc gtg aac tat gca 144  
Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala  
35 40 45

aca ggg aat ttg ccc ggt tgc tct ttc tct atc ttc ctc ttg gct ttg 192  
Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu  
50 55 60

ctg tcc tgt ctg acc gtt cca gct tcc gct tat gaa gtg cgc aac gtg 240  
Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val  
65 70 75 80

tcc ggg atg tac cat gtc acg aac gac tgc tcc aac tca agc att gtg 288  
Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val  
85 90 95

tat gag gca gcg gac atg atc atg cac acc ccc ggg tgc gtg ccc tgc 336  
Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

gtt cg<sup>g</sup> gag aac aac tct tcc cgc tgc tgg gta gcg ctc acc ccc acg 384

Val	Arg	Glu	Asn	Asn	Ser	Ser	Arg	Cys	Trp	Val	Ala	Leu	Thr	Pro	Thr		
115																	
120																125	
ctc	gca	gct	agg	aac	gcc	agc	gtc	ccc	acc	acg	aca	ata	cga	cgc	cac	432	
Leu	Ala	Ala	Arg	Asn	Ala	Ser	Val	Pro	Thr	Thr	Thr	Ile	Arg	Arg	His		
130																140	
gtc	gat	ttg	ctc	gtt	ggg	gcg	gct	gct	ttc	tgt	tcc	gct	atg	tac	gtg	480	
Val	Asp	Leu	Leu	Val	Gly	Ala	Ala	Ala	Phe	Cys	Ser	Ala	Met	Tyr	Val		
145																160	
150																155	
ggg	gac	ctc	tgc	gga	tct	gtc	ttc	ctc	gtc	tcc	cag	ctg	ttc	acc	atc	528	
Gly	Asp	Leu	Cys	Gly	Ser	Val	Phe	Leu	Val	Ser	Gln	Leu	Phe	Thr	Ile		
165																175	
tcg	cct	cgc	cg	cat	gag	acg	gtg	cag	gac	tgc	aat	tgc	tca	atc	tat	576	
Ser	Pro	Arg	Arg	His	Glu	Thr	Val	Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr		
180																190	
ccc	ggc	cac	ata	acg	gg	gt	ac	cg	at	g	g	at	at	at	at	624	
Pro	Gly	His	Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn		
195																205	
tgg	tcg	cct	aca	acg	gcc	ctg	gtg	gta	tcg	cag	ctg	ctc	cg	atc	cca	672	
Trp	Ser	Pro	Thr	Thr	Ala	Leu	Val	Val	Ser	Gln	Leu	Leu	Arg	Ile	Pro		
210																220	
caa	gct	gtg	gac	atg	gtg	g	g	gg	g	cc	at	tgg	g	tc	g	720	
Gln	Ala	Val	Val	Asp	Met	Val	Ala	Gly	Ala	His	Trp	Gly	Val	Leu	Ala		
225																240	
ggc	ctc	gcc	tac	tat	tcc	atg	gtg	gg	aa	tgg	g	ct	ttg	tt	ttg	768	
Gly	Leu	Ala	Tyr	Tyr	Ser	Met	Val	Gly	Asn	Trp	Ala	Lys	Val	Leu	Val		
245																255	
gtg	atg	cta	ctc	ttt	gcc	ggc	gtc	gac	gg	cat	acc	cgc	gt	tca	gg	816	
Val	Met	Leu	Leu	Phe	Ala	Gly	Val	Asp	Gly	His	Thr	Arg	Val	Ser	Gly		
260																270	
ggg	gca	gca	gcc	tcc	gat	acc	agg	ggc	ctt	gtg	tcc	ctc	ttt	agc	ccc	864	
Gly	Ala	Ala	Ala	Ser	Asp	Thr	Arg	Gly	Leu	Val	Ser	Leu	Phe	Ser	Pro		
275																285	
ggg	tcg	gct	cag	aaa	atc	cag	ctc	gta	aac	acc	aac	ggc	agt	tgg	cac	912	
Gly	Ser	Ala	Gln	Lys	Ile	Gln	Leu	Val	Asn	Thr	Asn	Gly	Ser	Trp	His		
290																300	
atc	aac	agg	act	gcc	ctg	aa	tgc	aa	gac	tcc	ctc	caa	aca	ggg	ttc	960	
Ile	Asn	Arg	Thr	Ala	Leu	Asn	Cys	Asn	Asp	Ser	Leu	Gln	Thr	Gly	Phe		
305																310	
315																320	
ttt	gcc	gca	cta	ttc	tac	aaa	cac	aaa	ttc	aa	c	tgc	tct	gga	tgc	1008	
Phe	Ala	Ala	Leu	Phe	Tyr	Lys	His	Lys	Phe	Asn	Ser	Ser	Gly	Cys	Pro		
325																330	
335																340	
gag	cgc	ttg	gcc	agc	tgt	cg	c	tcc	atc	gac	aag	ttc	g	cag	ggg	ttg	1056
Glu	Arg	Leu	Ala	Ser	Cys	Arg	Ser	Ile	Asp	Lys	Phe	Ala	Gln	Gly	Trp		

340

345

350

ggt ccc ctc act tac act gag cct aac agc tcg gac cag agg ccc tac			1104
Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr			
355	360	365	
tgc tgg cac tac gcg cct cga ccg tgt ggt att gta ccc gcg tct cag			1152
Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln			
370	375	380	
gtg tgc ggt cca gtg tat tgc ttc acc ccg agc cct gtt gtg gtg ggg			1200
Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly			
385	390	395	400
acg acc gat cgg ttt ggt gtc ccc acg tat aac tgg ggg gcg aac gac			1248
Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp			
405	410	415	
tcg gat gtg ctg att ctc aac aac acg cgg ccg cga ggc aac tgg			1296
Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp			
420	425	430	
ttc ggc tgt aca tgg atg aat ggc act ggg ttc acc aag acg tgt ggg			1344
Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly			
435	440	445	
ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac aac acc ttg acc tgc			1392
Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys			
450	455	460	
ccc act gac tgt ttt cgg aag cac ccc gag gcc acc tac gcc aga tgc			1440
Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys			
465	470	475	480
ggt tct ggg ccc tgg ctg aca cct agg tgt atg gtt cat tac cca tat			1488
Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr			
485	490	495	
agg ctc tgg cac tac ccc tgc act gtc aac ttc acc atc ttc aag gtt			1536
Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val			
500	505	510	
agg atg tac gtg ggg ggc gtg gag cac agg ttc gaa gcc gca tgc aat			1584
Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn			
515	520	525	
tgg act cga gga gag cgt tgt gac ttg gag gac agg gat aga tca gag			1632
Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu			
530	535	540	
ctt agc ccg ctg ctg tct aca aca gag tgg cag ata ctg ccc tgt			1680
Leu Ser Pro Leu Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys			
545	550	555	560
tcc ttc acc acc ctg ccg gcc cta tcc acc ggc ctg atc cac ctc cat			1728
Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly Leu Ile His Leu His			
565	570	575	

cag aac atc gtg gac gtg caa tac ctg tac ggt gta ggg tcg gcg gtt	1776
Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val	
580 585 590	
gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg ttg ctc ttc ctt ctc	1824
Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu	
595 600 605	
ctg gca gac gcg cgc atc tgc gcc tta tgg atg atg ctg ctg ata	1872
Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile	
610 615 620	
gct caa gct gag gcc gcc tta gag aac ctg gtg gtc ctc aat gcg gcg	1920
Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala	
625 630 635 640	
gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc ctt gtg ttc ttc tgt	1968
Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys	
645 650 655	
gct gcc tgg tac atc aag ggc agg ctg gtc cct ggt gcg gca tac gcc	2016
Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala	
660 665 670	
ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg ctg gcc tta cca cca	2064
Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Ala Leu Pro Pro	
675 680 685	
cga gct tat gcc tagtaa	2082
Arg Ala Tyr Ala	
690	

<210> 48

<211> 692

<212> PRT

<213> Hepatitis C virus

<400> 48

Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys Gly Phe Ala Asp Leu	
1 5 10 15	

Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu Gly Gly Ala Ala Arg	
20 25 30	

Ala Leu Ala His Gly Val Arg Val Leu Glu Asp Gly Val Asn Tyr Ala	
35 40 45	

Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu	
50 55 60	

Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Glu Val Arg Asn Val	
65 70 75 80	

Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser Asn Ser Ser Ile Val	
---	--

85

90

95

Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys  
100 105 110

Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu Thr Pro Thr  
115 120 125

Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr Thr Ile Arg Arg His  
130 135 140

Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val  
145 150 155 160

Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu Phe Thr Ile  
165 170 175

Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr  
180 185 190

Pro Gly His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn  
195 200 205

Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln Leu Leu Arg Ile Pro  
210 215 220

Gln Ala Val Val Asp Met Val Ala Gly Ala His Trp Gly Val Leu Ala  
225 230 235 240

Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp Ala Lys Val Leu Val  
245 250 255

Val Met Leu Leu Phe Ala Gly Val Asp Gly His Thr Arg Val Ser Gly  
260 265 270

Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val Ser Leu Phe Ser Pro  
275 280 285

Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr Asn Gly Ser Trp His  
290 295 300

Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe  
305 310 315 320

Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn Ser Ser Gly Cys Pro  
325 330 335

Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys Phe Ala Gln Gly Trp  
340 345 350

Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser Asp Gln Arg Pro Tyr  
355 360 365

Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile Val Pro Ala Ser Gln  
370 375 380

Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly  
385 390 395 400

Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn Trp Gly Ala Asn Asp  
405 410 415

Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro Pro Arg Gly Asn Trp  
420 425 430

Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe Thr Lys Thr Cys Gly  
435 440 445

Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn Asn Thr Leu Thr Cys  
450 455 460

Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ala Arg Cys  
465 470 475 480

Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met Val His Tyr Pro Tyr  
485 490 495

Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe Thr Ile Phe Lys Val  
500 505 510

Arg Met Tyr Val Gly Gly Val Glu His Arg Phe Glu Ala Ala Cys Asn  
515 520 525

Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp Arg Asp Arg Ser Glu  
530 535 540

Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp Gln Ile Leu Pro Cys  
545 550 555 560

Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly Leu Ile His Leu His  
565 570 575

Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly Val Gly Ser Ala Val  
580 585 590

Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu Leu Leu Phe Leu Leu  
595 600 605

Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp Met Met Leu Leu Ile  
610 615 620

Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val Val Leu Asn Ala Ala  
625 630 635 640

Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe Leu Val Phe Phe Cys  
645 650 655

Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro Gly Ala Ala Tyr Ala  
660 665 670

Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu Ala Leu Pro Pro  
675 680 685

Arg Ala Tyr Ala  
690

<210> 49

<211> 2433

<212> DNA

<213> Hepatitis C virus

<220>

<221> CDS

<222> 1..2430

<220>

<221> mat\_peptide

<222> 1..2427

<400> 49

atg	agc	acg	aat	cct	aaa	cct	caa	aga	aaa	acc	aaa	cgt	aac	acc	aac	48
Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn	
1				5						10				15		
cgc	cgc	cca	cag	gac	gtc	aag	ttc	ccg	ggc	ggt	ggt	cag	atc	gtt	ggt	96
Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly	
					20			25						30		
gga	gtt	tac	ctg	ttg	ccg	cgc	agg	ggc	ccc	agg	ttg	ggt	gtg	cgc	gct	144
Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala	
					35			40						45		
act	agg	aag	act	tcc	gag	cgg	tcg	caa	cct	cgt	ggg	agg	cga	caa	cct	192
Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro	
					50			55						60		
atc	ccc	aag	gct	cgc	cga	ccc	gag	ggt	agg	gcc	tgg	gct	cag	ccc	ggg	240
Ile	Pro	Lys	Ala	Arg	Arg	Pro	Glu	Gly	Arg	Ala	Trp	Ala	Gln	Pro	Gly	
					65			70			75			80		
tac	cct	tgg	ccc	ctc	tat	ggc	aat	gag	ggc	atg	ggg	tgg	gca	gga	tgg	288
Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Met	Gly	Trp	Ala	Gly	Trp	
					85			90						95		
ctc	ctg	tca	ccc	cgc	ggc	tct	cgg	cct	agt	tgg	ggc	cct	aca	gac	ccc	336
Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Thr	Asp	Pro	
					100			105						110		
cgg	cgt	agg	tcg	cgt	aat	ttg	ggt	aag	gtc	atc	gat	acc	ctt	aca	tgc	384
Arg	Arg	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys	
					115			120						125		
ggc	ttc	gcc	gac	ctc	gtg	ggg	tac	att	ccg	ctc	gtc	ggc	gcc	ccc	cta	432
Gly	Phe	Ala	Asp	Leu	Val	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Leu	
					130			135						140		
ggg	ggc	gct	gcc	agg	gcc	ctg	gcg	cat	ggc	gtc	cgg	gtt	ctg	gag	gac	480
Gly	Gly	Ala	Ala	Arg	Ala	Leu	Ala	His	Gly	Val	Arg	Val	Leu	Glu	Asp	
					145			150				155		160		

ggc gtg aac tat gca aca ggg aat ttg ccc ggt tgc tct ttc tct atc Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile 165 170 175	528
ttc ctc ttg gct ttg ctg tcc tgt ctg acc gtt cca gct tcc gct tat Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr 180 185 190	576
gaa gtg cgc aac gtg tcc ggg atg tac cat gtc acg aac gac tgc tcc Glu Val Arg Asn Val Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser 195 200 205	624
aac tca agc att gtg tat gag gca gcg gac atg atc atg cac acc ccc Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro 210 215 220	672
ggg tgc gtg ccc tgc gtt cgg gag aac aac tct tcc cgc tgc tgg gta Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val 225 230 235 240	720
gcg ctc acc ccc acg ctc gca gct agg aac gcc agc gtc ccc acc acg Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr 245 250 255	768
aca ata cga cgc cac gtc gat ttg ctc gtt ggg gcg gct gct ttc tgt Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys 260 265 270	816
tcc gct atg tac gtg ggg gac ctc tgc gga tct gtc ttc ctc gtc tcc Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser 275 280 285	864
cag ctg ttc acc atc tcg cct cgc cgg cat gag acg gtg cag gac tgc Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys 290 295 300	912
aat tgc tca atc tat ccc ggc cac ata acg ggt cac cgt atg gct tgg Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala Trp 305 310 315 320	960
gat atg atg atg aac tgg tcg cct aca acg gcc ctg gtg gta tcg cag Asp Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln 325 330 335	1008
ctg ctc cgg atc cca caa gct gtc gtg gac atg gtg gcg ggg gcc cat Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His 340 345 350	1056
tgg gga gtc ctg gcg ggc ctc gcc tac tat tcc atg gtg ggg aac tgg Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp 355 360 365	1104
gct aag gtt ttg gtt gtg atg cta ctc ttt gcc ggc gtc gac ggg cat Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His 370 375 380	1152
acc cgc gtg tca gga ggg gca gca gcc tcc gat acc agg ggc ctt gtg	1200

Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val			
385	390	395	400
tcc ctc ttt agc ccc ggg tcg gct cag aaa atc cag ctc gta aac acc			1248
Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr			
405	410	415	
aac ggc agt tgg cac atc aac agg act gcc ctg aac tgc aac gac tcc			1296
Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser			
420	425	430	
ctc caa aca ggg ttc ttt gcc gca cta ttc tac aaa cac aaa ttc aac			1344
Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn			
435	440	445	
tcg tct gga tgc cca gag cgc ttg gcc agc tgt cgc tcc atc gac aag			1392
Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys			
450	455	460	
ttc gct cag ggg tgg ggt ccc ctc act tac act gag cct aac agc tgc			1440
Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser			
465	470	475	480
gac cag agg ccc tac tgc tgg cac tac ggc cct cga ccg tgt ggt att			1488
Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile			
485	490	495	
gta ccc gcg tct cag gtg tgc ggt cca gtg tat tgc ttc acc ccg agc			1536
Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser			
500	505	510	
cct gtt gtg gtg ggg acg acc gat cgg ttt ggt gtc ccc acg tat aac			1584
Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn			
515	520	525	
tgg ggg gcg aac gac tcg gat gtg ctg att ctc aac aac acg ccg ccg			1632
Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro			
530	535	540	
ccg cga ggc aac tgg ttc ggc tgt aca tgg atg aat ggc act ggg ttc			1680
Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe			
545	550	555	560
acc aag acg tgt ggg ggc ccc ccg tgc aac atc ggg ggg gcc ggc aac			1728
Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn			
565	570	575	
aac acc ttg acc tgc ccc act gac tgt ttt cgg aag cac ccc gag gcc			1776
Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala			
580	585	590	
acc tac gcc aga tgc ggt tct ggg ccc tgg ctg aca cct agg tgt atg			1824
Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met			
595	600	605	
gtt cat tac cca tat agg ctc tgg cac tac ccc tgc act gtc aac ttc			1872
Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe			

610	615	620	
acc atc ttc aag gtt agg atg tac gtg ggg ggc gtg gag cac agg ttc			1920
Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe			
625	630	635	640
gaa gcc gca tgc aat tgg act cga gga gag cgt tgt gac ttg gag gac			1968
Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp			
645	650	655	
agg gat aga tca gag ctt agc ccg ctg ctg tct aca aca gag tgg			2016
Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Ser Thr Thr Glu Trp			
660	665	670	
cag ata ctg ccc tgt tcc ttc acc acc ctg ccg gcc cta tcc acc ggc			2064
Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly			
675	680	685	
ctg atc cac ctc cat cag aac atc gtg gac gtg caa tac ctg tac ggt			2112
Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly			
690	695	700	
gta ggg tcg gcg gtt gtc tcc ctt gtc atc aaa tgg gag tat gtc ctg			2160
Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu			
705	710	715	720
ttg ctc ttc ctt ctc ctg gca gac gcg cgc atc tgc gcc tgc tta tgg			2208
Leu Leu Phe Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp			
725	730	735	
atg atg ctg ctg ata gct caa gct gag gcc gcc tta gag aac ctg gtg			2256
Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val			
740	745	750	
gtc ctc aat gcg gcg gcc gtg gcc ggg gcg cat ggc act ctt tcc ttc			2304
Val Leu Asn Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe			
755	760	765	
ctt gtg ttc ttc tgt gct gcc tgg tac atc aag ggc agg ctg gtc cct			2352
Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro			
770	775	780	
ggt gcg gca tac gcc ttc tat ggc gtg tgg ccg ctg ctc ctg ctt ctg			2400
Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu			
785	790	795	800
ctg gcc tta cca cca cga gct tat gcc tagtaa			2433
Leu Ala Leu Pro Pro Arg Ala Tyr Ala			
805			

<210> 50

<211> 809

<212> PRT

<213> Hepatitis C virus

<400> 50

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu  
130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr  
180 185 190

Glu Val Arg Asn Val Ser Gly Met Tyr His Val Thr Asn Asp Cys Ser  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro  
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val  
225 230 235 240

Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro Thr Thr  
245 250 255

Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Phe Cys  
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser  
275 280 285

Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln Asp Cys  
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala Trp  
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln  
325 330 335

Leu Leu Arg Ile Pro Gln Ala Val Val Asp Met Val Ala Gly Ala His  
340 345 350

Trp Gly Val Leu Ala Gly Leu Ala Tyr Tyr Ser Met Val Gly Asn Trp  
355 360 365

Ala Lys Val Leu Val Val Met Leu Leu Phe Ala Gly Val Asp Gly His  
370 375 380

Thr Arg Val Ser Gly Gly Ala Ala Ala Ser Asp Thr Arg Gly Leu Val  
385 390 395 400

Ser Leu Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val Asn Thr  
405 410 415

Asn Gly Ser Trp His Ile Asn Arg Thr Ala Leu Asn Cys Asn Asp Ser  
420 425 430

Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Lys His Lys Phe Asn  
435 440 445

Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Ser Ile Asp Lys  
450 455 460

Phe Ala Gln Gly Trp Gly Pro Leu Thr Tyr Thr Glu Pro Asn Ser Ser  
465 470 475 480

Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Ile  
485 490 495

Val Pro Ala Ser Gln Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser  
500 505 510

Pro Val Val Val Gly Thr Thr Asp Arg Phe Gly Val Pro Thr Tyr Asn  
515 520 525

Trp Gly Ala Asn Asp Ser Asp Val Leu Ile Leu Asn Asn Thr Arg Pro  
530 535 540

Pro Arg Gly Asn Trp Phe Gly Cys Thr Trp Met Asn Gly Thr Gly Phe  
545 550 555 560

Thr Lys Thr Cys Gly Gly Pro Pro Cys Asn Ile Gly Gly Ala Gly Asn  
565 570 575

Asn Thr Leu Thr Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala  
580 585 590

Thr Tyr Ala Arg Cys Gly Ser Gly Pro Trp Leu Thr Pro Arg Cys Met  
595 600 605

Val His Tyr Pro Tyr Arg Leu Trp His Tyr Pro Cys Thr Val Asn Phe  
610 615 620

Thr Ile Phe Lys Val Arg Met Tyr Val Gly Gly Val Glu His Arg Phe  
625 630 635 640

Glu Ala Ala Cys Asn Trp Thr Arg Gly Glu Arg Cys Asp Leu Glu Asp  
645 650 655

Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Ser Thr Thr Glu Trp  
660 665 670

Gln Ile Leu Pro Cys Ser Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly  
675 680 685

Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly  
690 695 700

Val Gly Ser Ala Val Val Ser Leu Val Ile Lys Trp Glu Tyr Val Leu  
705 710 715 720

Leu Leu Phe Leu Leu Ala Asp Ala Arg Ile Cys Ala Cys Leu Trp  
725 730 735

Met Met Leu Leu Ile Ala Gln Ala Glu Ala Ala Leu Glu Asn Leu Val  
740 745 750

Val Leu Asn Ala Ala Ala Val Ala Gly Ala His Gly Thr Leu Ser Phe  
755 760 765

Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Val Pro  
770 775 780

Gly Ala Ala Tyr Ala Phe Tyr Gly Val Trp Pro Leu Leu Leu Leu Leu  
785 790 795 800

Leu Ala Leu Pro Pro Arg Ala Tyr Ala  
805

<210> 51

<211> 17

<212> PRT

<213> Hepatitis C virus

<400> 51

Ser Asn Ser Ser Glu Ala Ala Asp Met Ile Met His Thr Pro Gly Cys  
1 5 10 15

Val

<210> 52

<211> 22  
<212> PRT  
<213> Hepatitis C virus

<400> 52

Gly	Gly	Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Asn	Trp
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Ser	Pro	Thr	Thr	Ala	Leu									
		20												

<210> 53

<211> 37  
<212> PRT  
<213> Hepatitis C virus

<400> 53

Tyr	Glu	Val	Arg	Asn	Val	Ser	Gly	Ile	Tyr	His	Val	Thr	Asn	Asp	Cys
1				5					10						15
Ser	Asn	Ser	Ser	Ile	Val	Tyr	Glu	Ala	Ala	Asp	Met	Ile	Met	His	Thr
	20					25								30	
Pro	Gly	Cys	Gly	Lys											
		35													

<210> 54

<211> 25  
<212> PRT  
<213> Hepatitis C virus

<400> 54

Gly	Gly	Thr	Pro	Thr	Val	Ala	Thr	Arg	Asp	Gly	Lys	Leu	Pro	Ala	Thr
1				5					10						15
Gln	Leu	Arg	Arg	His	Ile	Asp	Leu	Leu							
		20					25								

<210> 55

<211> 25  
<212> PRT  
<213> Hepatitis C virus

<400> 55

Gly Gly Thr Pro Thr Leu Ala Ala Arg Asp Ala Ser Val Pro Thr Thr  
1 5 10 15

Thr Ile Arg Arg His Val Asp Leu Leu  
20 25

<210> 56

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 56

Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr Gln Val Arg Asn  
1 5 10 15

Ser Thr Gly Leu  
20

<210> 57

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 57

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro  
1 5 10 15

Asn Ser Ser Ile  
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<210> 58

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 58

Asn Asp Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala His Asp Ala Ile  
1 5 10 15

Leu His Thr Pro  
20

<210> 59

<211> 20

<212> PRT  
<213> Hepatitis C virus

<400> 59

Ser Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr  
1 5 ' 10 15  
Pro Gly Cys Val  
20

<210> 60

<211> 19  
<212> PRT  
<213> Hepatitis C virus

<400> 60

His Asp Ala Ile Leu His Thr Pro Gly Val Pro Cys Val Arg Glu Gly  
1 5 10 15  
Asn Val Ser

<210> 61

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 61

Cys Val Arg Glu Gly Asn Val Ser Arg Cys Trp Val Ala Met Thr Pro  
1 5 10 15  
Thr Val Ala Thr  
20

<210> 62

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 62

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr  
1 5 10 15  
Gln Leu Arg Arg

<210> 63

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 63

Leu Pro Ala Thr Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser  
1 5 10 15

Ala Thr Leu Cys  
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<210> 64

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 64

Leu Val Gly Ser Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu  
1 5 10 15

Cys Gly Ser Val  
20

<210> 65

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 65

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys  
1 5 10 15

Asn Cys Ser Ile  
20

<210> 66

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 66

Thr	Gln	Gly	Cys	Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	His
1					5				10					15	
Arg	Met	Ala	Trp												
				20											

<210> 67

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 67

Ile	Thr	Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Met	Asn	Trp	Ser	Pro
1					5				10					15	
Thr	Ala	Ala	Leu												
			20												

<210> 68

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 68

Asn	Trp	Ser	Pro	Thr	Ala	Ala	Leu	Val	Met	Ala	Gln	Leu	Leu	Arg	Ile
1					5				10					15	
Pro	Gln	Ala	Ile												
			20												

<210> 69

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 69

Leu	Leu	Arg	Ile	Pro	Gln	Ala	Ile	Leu	Asp	Met	Ile	Ala	Gly	Ala	His
1					5				10					15	
Trp	Gly	Val	Leu												
			20												

<210> 70

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 70

Ala Gly Ala His Trp Gly Val Leu Ala Gly Ile Ala Tyr Phe Ser Met  
1 5 10 15  
Val Gly Asn Met  
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<210> 71

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 71

Val Val Leu Leu Leu Phe Ala Gly Val Asp Ala Glu Thr Ile Val Ser  
1 5 10 15  
Gly Gly Gln Ala  
20

<210> 72

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 72

Ser Gly Leu Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln  
1 5 10 15  
Leu Ile Asn Thr  
20

<210> 73

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 73

Gln Asn Ile Gln Leu Ile Asn Thr Asn Gly Gln Trp His Ile Asn Ser  
1 5 10 15

Thr Ala Leu Asn  
20

<210> 74

<211> 21  
<212> PRT  
<213> Hepatitis C virus

<400> 74

Leu Asn Cys Asn Glu Ser Leu Asn Thr Gly Trp Trp Leu Ala Gly Leu  
1 5 10 15

Ile Tyr Gln His Lys  
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<210> 75

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 75

Ala Gly Leu Ile Tyr Gln His Lys Phe Asn Ser Ser Gly Cys Pro Glu  
1 5 10 15

Arg Leu Ala Ser  
20

<210> 76

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 76

Gly Cys Pro Glu Arg Leu Ala Ser Cys Arg Pro Leu Thr Asp Phe Asp  
1 5 10 15

Gln Gly Trp Gly  
20

<210> 77

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 77

Thr Asp Phe Asp Gln Gly Trp Gly Pro Ile Ser Tyr Ala Asn Gly Ser  
1 5 10 15  
Gly Pro Asp Gln  
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<210> 78

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 78

Ala Asn Gly Ser Gly Pro Asp Gln Arg Pro Tyr Cys Trp His Tyr Pro  
 1                   5                   10                   15  
 Pro Lys Pro Cys  
 20

<210> 79

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 79

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Trp His Tyr Pro Pro Lys Pro Cys Gly Ile Val Pro Ala Lys Ser Val
1           5           10           15

Cys Gly Pro Val
20

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<210> 80

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 80

Ala Lys Ser Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val  
1 5 10 15  
Val Val Gly Thr

<210> 81

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 81

Pro	Ser	Pro	Val	Val	Val	Gly	Thr	Thr	Asp	Arg	Ser	Gly	Ala	Pro	Thr
1															15

Tyr	Ser	Trp	Gly												
			20												

<210> 82

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 82

Gly	Ala	Pro	Thr	Tyr	Ser	Trp	Gly	Glu	Asn	Asp	Thr	Asp	Val	Phe	Val
1															15

Leu	Asn	Asn	Thr												
			20												

<210> 83

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 83

Gly	Asn	Trp	Phe	Gly	Cys	Thr	Trp	Met	Asn	Ser	Thr	Gly	Phe	Thr	Lys
1															15

Val	Cys	Gly	Ala												
			20												

<210> 84

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 84

Gly Phe Thr Lys Val Cys Gly Ala Pro Pro Val Cys Ile Gly Gly Ala  
1 5 10 15

Gly Asn Asn Thr  
20

<210> 85

<211> 19  
<212> PRT  
<213> Hepatitis C virus

<400> 85

Ile Gly Gly Ala Gly Asn Asn Thr Leu His Cys Pro Thr Asp Cys Arg  
1 5 10 15

Lys His Pro

<210> 86

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 86

Thr Asp Cys Phe Arg Lys His Pro Asp Ala Thr Tyr Ser Arg Cys Gly  
1 5 10 15

Ser Gly Pro Trp  
20

<210> 87

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 87

Ser Arg Cys Gly Ser Gly Pro Trp Ile Thr Pro Arg Cys Leu Val Asp  
1 5 10 15

Tyr Pro Tyr Arg  
20

<210> 88

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 88

Cys	Leu	Val	Asp	Tyr	Pro	Tyr	Arg	Leu	Trp	His	Tyr	Pro	Cys	Thr	Ile
1				5					10					15	
Asn	Tyr	Thr	Ile												
			20												

<210> 89

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 89

Pro	Cys	Thr	Ile	Asn	Tyr	Thr	Ile	Phe	Lys	Ile	Arg	Met	Tyr	Val	Gly
1					5				10					15	
Gly	Val	Glu	His												
			20												

<210> 90

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 90

Met	Tyr	Val	Gly	Gly	Val	Glu	His	Arg	Leu	Glu	Ala	Ala	Cys	Asn	Trp
1					5				10					15	
Thr	Pro	Gly	Glu												
			20												

<210> 91

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 91

Ala	Cys	Asn	Trp	Thr	Pro	Gly	Glu	Arg	Cys	Asp	Leu	Glu	Asp	Arg	Asp
1					5				10					15	

Arg Ser Glu Leu  
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<210> 92

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 92

Glu Asp Arg Asp Arg Ser Glu Leu Ser Pro Leu Leu Leu Thr Thr Thr  
1 5 10 15

Gln Trp Gln Val  
20

<210> 93

<211> 9  
<212> PRT  
<213> Hepatitis C virus

<400> 93

Tyr Gln Val Arg Asn Ser Thr Gly Leu  
1 5

<210> 94

<211> 29  
<212> DNA  
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<220>  
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<400> 94

acgtccgtac gttcgaatta attaattcga

29

<210> 95

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<400> 95

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<210> 96

<211> 19

<212> DNA

<213> Hepatitis C virus

<400> 96

gtttaaccac tgcacatgatg 19

<210> 97

<211> 20

<212> DNA

<213> Hepatitis C virus

<400> 97

gtccccatcga gtgcggctac 20

<210> 98

<211> 45

<212> DNA

<213> Hepatitis C virus

<400> 98

cgtgacatgg tacattccgg acacttggcg cacttcataa gcgga 45

<210> 99

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 99

tgcctcatac acaatggagc tctggacga gtcgttcgtg ac 42

<210> 100

<211> 42

<212> DNA

<213> Hepatitis C virus

<400> 100

tacccagcag cgggagctct gttgctcccg aacgcagggc ac 42

<210> 101

<211> 42  
<212> DNA  
<213> Hepatitis C virus

<400> 101

tgtcgtggtg gggacggagg cctgccttagc tgcgagcgtg gg 42

<210> 102

<211> 48  
<212> DNA  
<213> Hepatitis C virus

<400> 102

cgttatgtgg cccgggtaga ttgagcactg gcagtcctgc accgtctc 48

<210> 103

<211> 42  
<212> DNA  
<213> Hepatitis C virus

<400> 103

cagggccgtt ctaggcctcc actgcatcat catatccaa gc 42

<210> 104

<211> 26  
<212> DNA  
<213> Hepatitis C virus

<400> 104

ccggaatgta ccatgtcacg aacgac 26

<210> 105

<211> 24  
<212> DNA  
<213> Hepatitis C virus

<400> 105  
gctccattgt gtatgaggca gcgg 24

<210> 106

<211> 23  
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<400> 106

gagctccgc tgctggtag cg 23

<210> 107

<211> 25  
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<400> 107

cctccgtccc caccacgaca atacg 25

<210> 108

<211> 27  
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<400> 108

ctacccgggc cacataacgg gtcaccg 27

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<400> 109

ggaggcctac aacggccctg gtgg 24

<210> 110

<211> 22

<212> DNA  
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<400> 110

ttctatcgat taaatagaat tc

22

<210> 111

<211> 23  
<212> DNA  
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<400> 111

gccatacgct cacagccgat ccc

23

<210> 112

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 112

Tyr Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys  
1 5 10 15

Ser Asn Ser Ser  
20

<210> 113

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 113

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp  
1 5 10 15

Met Ile Met His Thr  
20

<210> 114

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 114

Ala Ala Asp Met Ile Met His Thr Pro Gly Cys Val Pro Cys Val  
1 5 10 15

Arg Glu Asn Asn Ser  
20

<210> 115

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 115

Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp Val Ala Leu  
1 5 10 15

Thr Pro Thr Leu Ala  
20

<210> 116

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 116

Val Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ala Ser Val Pro  
1 5 10 15

Thr Thr Thr Ile Arg  
20

<210> 117

<211> 20  
<212> PRT  
<213> Hepatitis C virus

<400> 117

Ser Val Pro Thr Thr Ile Arg Arg His Val Asp Leu Leu Val  
1 5 10 15

Gly Ala Ala Ala Phe  
20

<210> 118

<211> 20  
<212> PRT

<213> Hepatitis C virus

<400> 118

Leu Leu Val Gly Ala Ala Ala Phe Cys Ser Ala Met Tyr Val Gly  
1 5 10 15

Asp Leu Cys Gly Ser  
20

<210> 119

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 119

Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser Gln Leu  
1 5 10 15

Phe Thr Ile Ser Pro  
20

<210> 120

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 120

Ser Gln Leu Phe Thr Ile Ser Pro Arg Arg His Glu Thr Val Gln  
1 5 10 15

Asp Cys Asn Cys Ser  
20

<210> 121

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 121

Thr Val Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr  
1 5 10 15

Gly His Arg Met Ala  
20

<210> 122

<211> 20

<212> PRT

<213> Hepatitis C virus

<400> 122

His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp  
1 5 10 15  
Ser Pro Thr Thr Ala  
20

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S2	2881	CHIMP OR CHIMPANZEE
S3	223	S1 AND S2
S4	1009729	DT=REVIEW?
S5	18	S3 AND S4
S6	931878	MODEL OR MODELS
S7	46	S1 AND S2 AND S6
S8	37	S7 NOT S5
S9	37	Sort S8/ALL/PY
S10	2645	CHIMPS OR CHIMPANZEES
S11	169	S1 AND S10 NOT S3
S12	29	S4 AND S11
S13	25	S6 AND S11
S14	59	AU=MAERTENS G?
S15	45	S1 AND S14

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\$8.00 TELNET  
\$23.68 Estimated cost this search  
\$24.00 Estimated total session cost 3.285 DialUnits

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